INTRODUCTION AND AIMS: Arteriovenous fistulas (AVFs) standards are predominantly based on older reports; however, the haemodialysis population and practices have changed significantly over the last decade. This study examined clinical use and patency of fistulas created in the recent era.

METHODS: We collected data in all the fistulas created at nine centres in Scotland in 2015. Primary endpoints were efficacy as assessed by initial clinical use and primary, primary assisted, and secondary patency at 1 year. Interventions to maintain or restore patency and predictors of patency loss were assessed. Kaplan-Meir and competing risks analyses were performed to estimate the probability of fistula failure. All patients were followed-up for at least 1 year, or had a censoring event.

RESULTS: We included 582 AVFs created in 537 patients (mean age 60 [SD 14] years; 60% men; 42% with diabetes). Mean follow-up was 11.8 months (SD 7.6). By the end of the follow-up, 322 (55.3%) fistulas were successfully used for dialysis for a minimum of 30 days. At 1 year, 48% (95% CI 44-52) of fistulas had primary patency, 67% (95% CI 63-71) had primary assisted patency, and 69% (65-73) had secondary patency, with most loss of primary patency because of primary failure (30%) (Figure). An average of 0.48 interventions per patient-year was required to maintain or restore patency. First attempt for an upper arm fistula was associated with prolonged patency. The cumulative hazard and cumulative incident functions for AVF failure were 31% (95% CI 27-35) and 23% (95% CI 20-27) at 1 year, respectively.

CONCLUSIONS: Despite advances in recent years with pre-operative vessel assessment and surveillance, patencies have not improved with primary failures remaining the major obstacle. Competing events should be taken into consideration otherwise biases may occur with overestimation of the probability of fistula failure.